M e m o r a n d u m

To:	Panel Members	Date:	March 27, 2003
From:	Ron Tagami, Manager Peter DeMauro, General Counsel	Analyst:	N. Weingart
Subject:	One-Step Agreement for **Rantec Power Systems Inc.** (www.rantec. com)		

CONTRACTOR:

- Training Project Profile: Retraining: companies with out-of-state competition
- Legislative Priorities: Moving to a High Performance Workplace and Promotion of California's Manufacturing Workforce
- Type of Industry: Manufacturing Power Supplies
- Repeat Contractor: Yes
- Contractor's Full Time Employees:
  - Company Wide: 2,358
  - In California: 900
- Fringe Benefits: Yes
- Union Representation: No
- Name and Local Number of Union representing workers to be Trained: N/A

CONTRACT:

- Program Costs: $60,840
- Substantial Contribution: $0
- Total ETP Funding: $60,840
- In-Kind Contribution: $123,595
- Reimbursement Method: Fixed-Fee
- County(ies) Served: San Luis Obispo
- Duration of Agreement: 24 months

SUBCONTRACTORS:

CTE Computer Training Centers, Inc., San Luis Obispo, California ($3,000 for computer training)
Omni Training Corporation, Rancho Cucamonga, California ($4,250 for soldering training)

THIRD PARTY SERVICES:

The applicant states consultant services have not and will not be used other than those specified in the Subcontractor Section.

PRIOR PROJECTS:

The following are completed project statistics for ETP Agreements with this Contractor within the last five years:

Agreement No.	Location (City)	Term	Agreement Amount	Amount Earned	% Earned
ET01-0243	Los Osos	1/12/2001-1/11/2003	$77,470	$39,090	50%

Due to economic conditions that caused a reduction in the workforce, the company was only able to complete training for 44 out of 60 people. Final reimbursement was issued for 30 trainees who met all ETP requirements. The Contractor will now invoice for 11 additional trainees who apparently completed all training but lacked adequate documentation for SOST hours. Should these 11 ultimately be approved for payment, the Contractor could finish with a 75% to 80% completion rate.

The workforce has now increased due to an improved business climate and the return of outsourced work from Mexico. The new ETP proposal contains only class/lab hours (there is no SOST), so any record keeping difficulties experienced in the first Agreement should not arise.

NARRATIVE:

Rantec Power Systems Inc. is eligible to provide ETP training under Title 22, California Code of Regulations, Section 4416(b) as a company engaged in manufacturing. The company also meets ETP's funding priorities to develop workers with skills that prepare them for the challenges of a high performance workplace of the future and promoting the retention and expansion of the state's manufacturing workforce.

Rantec Power Systems Inc. is a designer and manufacturer of high and low voltage power supplies, DC/DC converters, AC/DC converters, EMI (electromagnetic interference) filters, power factor correction modules, and custom power systems for military, commercial and aerospace applications. The Los Osos facility, with 94 full-time employees, produces standard as well as custom designs. Founded in 1956, Rantec is a subsidiary of ESCO Technologies Inc., headquartered in St. Louis, Missouri.

NARRATIVE: (continued)

The company reports that in early 2000, its management team began several initiatives to upgrade operations, which led to a review of all operations that impacted product quality. Rantec began reorganizing its workforce into a team-based organization. A Training Review Team was established to identify training needs and implement a comprehensive training program. The company determined that it needed to improve its investment workforce skills to increase product quality and its standing within the industry; in January 2001, Rantec undertook its first ETP training Agreement and in December 2001 became certified in International Standards of Operations (ISO) 9001.

In January 2003, Rantec transferred some assembly operations from an affiliate in Mexico back to Los Osos, which represented the transfer of jobs back to California. Some full-time positions have been added to accommodate the increased workload and those recently hired employees, as well as existing workers, now require training on new assembly tasks. Rantec also identified a need to continue its cross-training for multi-functional team members, provide training for shifts to new technology and designs, and train on new and upgraded equipment such as the aqueous cleaning system, automated coater, pick and place machines, and computer-controlled machines. Therefore, training will be provided to frontline workers and one supervisor in the following areas:

Manufacturing Skills training will include soldering and assembly skills, component cleaning, conformal coating, component identification, test troubleshooting, rework, electrostatic discharge, wiring practices, staking and bonding, surface mount technology, flow line manufacturing, automated pick and pack, power electronics, and failure analysis. Rantec expects that this training will enable it to produce a manufacturing operation that meets current industry standards. The plan provides for many employees to be trained in each skill area, thereby affording the flexibility to quickly adapt to changing production needs.

Continuous Improvement training includes ISO 9001 requirements, lean manufacturing, Six Sigma, and teambuilding. These modules continue to support the reorganization into a multi-functional, team-based organization. To be effective, the company declares employees must master a wide variety of skills to apply as team activities require.

Business Skills training will include document control and access, creation and interpretation of engineering documents, military and industrial specifications, and project and strategic planning. These courses address issues of creating, maintaining and controlling engineering documents that are the basis of Rantec's products. The document control system must support the creation of quality documentation and offer the flexibility to make and communicate needed design and specification changes.

Computer Skills training will be in Microsoft Office applications, which supports improved use of automated document creation, storage, retrieval and distribution. It also reflects the need for greater computer literacy in the workforce as many newer pieces of process equipment are personal computer (PC) driven.

The Contractor will administer the Agreement.

NARRATIVE: (continued)

Supplemental Nature of Training

Rantec currently provides new employee orientation; mandatory, regulatory safety training primarily to manufacturing workers; basic skills training by department; professional enrichment seminars and workshops to design engineers (some local and some at the University of Virginia); and outside skills seminars to administration, accounting and marketing staff.

The first ETP Agreement helped Rantec correct serious deficiencies in its existing training program by increasing the amount of training provided, the types of training offered, and changing training delivery methods. The Agreement provided Continuous Improvement Skills, Manufacturing Skills, Business Skills, and Computer Skills. Forty-five trainees in assembly, engineering, inspection, testing, and supervision finished the program.

The curriculum in this new proposal encompasses the same types of training and contains many of the same modules. However, in many instances, course content has been changed, augmented or updated, and some courses now include a practical skill demonstration in a lab format for practicing skills. Seventeen of the Manufacturing Skills courses have not been given before or have undergone a complete change in content. Half of the business and Continuous Improvement courses have not been provided, and the Computer Skills course is completely new. The company plans to increase the training provided to Manufacturing Test, Quality Assurance, Material Control, and other manufacturing support staff. Approximately 25% of the trainees will be new to the program, and 75% will go through training again taking different subjects. Without ETP funding, Rantec would be unable to provide the training outlined in this proposal.

Rantec recognizes that the skills of its employees must be continuously upgraded to support the changing requirements of a high performance workplace. The provision of training is now part of the company's operating procedures. Its Training Review Team meets at least twice annually to review training and implement changes based on production requirements. At the conclusion of the ETP Agreement, Rantec will continue to provide new and updated courses as needed to employees in all departments.

In-Kind Contribution

Rantec's in-kind contribution will be approximately $123,595. This figure includes $77,552 for ETP trainees' wages and fringe benefits during class/lab training hours. Rantec also plans to deliver an additional 2,270 class/lab training hours on its own for non-ETP eligible trainees (who need less than 40 hours) and extra hours for ETP trainees. This portion of the program is estimated at $38,717 for trainee wages and fringe benefits and $7,326 for actual training delivery.

COMMENTS:

Participants in this project meet the Panel definition of frontline worker under Title 22 California Code of Regulations, Section 4400(ee), except for one supervisor.

PROPOSED ACTION:

Staff recommends that the Panel approve the One-Step Agreement if funding is available and the project meets the Panel's priorities. This recommendation is based on Rantec's stated need to provide its employees with high performance workplace skills to enhance the company's competitive position, to grow, and to ensure a continuing relationship with its customers.

TRAINING PLAN:

Grp/Trainee Type	Types of Training	No. Retain	No. Class/Lab Videocnf. Hrs	No. CBT Hrs	No. SOST Hrs.	Cost per Trainee	Hourly Wage after 90 days
Retrainee Jobs 1-4	Continuous Improvement, Business Skills, Computer Skills, Manufacturing Skills	58	40-100	0	0	$520-$1,300	*$10.98-$39.91

	Range of Hourly Wages *$10.98-$39.91
	Prevalent Hourly Wage $13.64
	Average Cost per Trainee $1,049

Health Benefit used to meet ETP minimum wage:	**Turnover Rate**	**% of Mgrs & Supervisors to be trained:**
* Health and dental benefits of $2.19 per hour may be applied to the base wage in order to meet the ETP minimum hourly wage of $10.98 for San Luis Obispo County.	17.5%	2%

Rantec Power Systems Inc.
Menu Curriculum

Class/Lab Hours
40-100 Trainees will receive a selection of the following courses:

MANUFACTURING SKILLS

TC01 **General Soldering and Assembly Skills - Basic**
- Basic soldering theory
- Wire preparation, wiring and soldering of terminals
- Basic through-hole and surface-mount components and Printed Wiring Boards (PWBs)
- Industry standard inspection criteria

TC02A **General Soldering and Assembly Skills – Metal Board Applications**
- Board construction and limitations
- Unique Surface Mount Technology (SMT) soldering skills
- Soldering and rework techniques unique to metal board applications
- Board assembly handling and precautions

TC02B **General Soldering and Assembly Skills – Metal Board Applications**
- All topics listed for TC02A above
- Practical exercises, demonstrations and supervised performance of lab tasks

TC04A **Hardware Load, Swaging and Pressing**
- Common types of hardware, equipment and tooling
- Identification, selection and handling of dies
- Installation skills, removal and rework skills
- Workmanship requirements

TC04B **Hardware Load, Swaging and Pressing**
- All topics listed for TC04A above
- Practical exercises, demonstrations and supervised performance of tasks

TC05A **Component Cleaning, Cleanliness Requirements**
- Component cleaning criteria, methods and requirements
- Basic hand cleaning, JetClean system operation
- Aqueous and deionized (DI) washing, use of Omega test instrument
- Vapor degreaser operation

TC05B **Component Cleaning, Cleanliness Requirements**
- All topics listed for TC05A above
- Practical exercises, demonstrations and supervised performance of tasks

Rantec Power Systems Inc. Menu Curriculum
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TC07A **Conformal Coating Touch-Up**

- Removal of conformal coatings while minimizing circuit board damage
- Spot applications of conformal coatings
- Repair techniques for coated boards

TC07B **Conformal Coating Touch-Up**

- All topics listed for TC07A above
- Practical exercises, demonstrations and supervised performance of tasks

TC08 **Component Identification, Verification and Value Recognition**

- Comprehension of reference designators, engineering notations
- Identification of through-hole and surface mount components
- Matching parts to engineering and catalog descriptions

TC09 **Test Troubleshooting**

- Test equipment capabilities and operation
- Circuit theory and analysis
- Principles and decision logic to apply in troubleshooting

TC11 **Disposition Requirements**

- Resolution of defects and negative inspection findings
- Determining methods for reworking to print
- Handling of nonconforming parts, bag-and-tag program

TC12 **General Soldering and Assembly Skills – Advanced**

- Advanced soldering theory
- Skills enhancement for senior assemblers

TC13A **General Soldering and Assembly Skills – Rework and Repair**

- Advanced surface mount and through-hole soldering skills
- Advanced rework, component removal/replacement
- Repairing pads and traces, selecting appropriate solder tools
- Special practices for ceramic components
- Determining repair actions, approval process, deviations from prints

TC13B **General Soldering and Assembly Skills – Rework and Repair**

- All topics listed for TC013A above
- Practical exercises, demonstrations and supervised performance of tasks

Rantec Power Systems Inc. Menu Curriculum
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TC14 **Electrostatic Discharge (ESD) Protocols**

- ESD protection fundamentals, procedures
- Hardware handling and protection actions
- Personnel equipment for ESD safety, function and use

TC15A **Wiring Practices**

- Wire identification
- Wire stripping, crimping and soldering
- Routing, securing, lacing and twisting

TC15B **Wiring Practices**

- All topics listed for TC015A above
- Practical exercises, demonstrations and supervised performance of tasks

TC17 **Conformal Coating**

- Preparation of hardware for coating
- Mixing and applying conformal coating
- Maintenance of spray booth and equipment
- Respiratory protection
- Principles of conformal coating, quality and inspection requirements

TC18A **Staking and Bonding**

- Objectives and requirements of staking and bonding in board assembly
- Application, curing and handling of various materials used

TC18B **Staking and Bonding**

- All topics listed for TC018A above
- Practical exercises, demonstrations and supervised performance of tasks

TC19 **General Principles, Requirements and Status of Rantec SMT**

- Current SMT assembly capabilities
- Important design considerations
- Stencil issues

TC20 **Labeling, Stamping and Etching**

- Use of label design and control software
- Operation of the label printer
- Operation of electrolytic etch and ink stamping systems
- Labeling, stamping and etching requirements

Rantec Power Systems Inc. Menu Curriculum
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TC22 **Flow Line Manufacturing**

- Apply principles of flow line assembly to our production sequences
- Implement new manufacturing procedures and processes
- Develop work-cell team structure, empowered to organize work

TC23 **Machine Coil Winding**

- Operation of Meteor coil winders
- Set-up and maintenance of coil winders

TC26 **Manual Coil Winding and Transformer Assembly**

- Loading and operation of manual coil winding equipment
- Transformer production, assembly and bonding

TC27 **High Voltage Assembly Practices**

- High voltage assembly practices
- Abrasive blasting of components
- Vapor phase soldering

TC28 **Use of Common Measuring and Assembly Devices**

- Use of mechanical measuring devices, basic test meters, scales
- Tool control protocols, checking out tools, removing from service
- Use and care of torque tools

TC30 **Environmental Test Operations**

- Capabilities of Rantec environmental test equipment
- Programming functions for test chamber operation
- Loading chambers and performing hardware testing

TC31 **Automated Pick-and-Place, Reflow Oven Operation**

- Loading, setup and programming of automated pick-and-place surface mount assembly equipment
- Loading and operation of reflow oven
- Producing assemblies that conform to quality requirements

TC32 **Power Electronics for Technicians**

- Power electronics applications
- Functions of power electronics devices
- Operation of various power conversion circuits

TC33 **Power Electronics for Engineers**

- Analysis of power conversion circuits
- Design issues for power conversion
- Circuit topology and control systems

Rantec Power Systems Inc. Menu Curriculum
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TC34 **Certified Inspector Training**

- Techniques for evaluating conformance of assemblies to quality standards
- Use of inspection tools, gauges and meters
- Documentation requirements, inspection records

TC35 **Potting and Encapsulation**

- Handling and preparation of encapsulant materials
- Techniques for proper encapsulation and curing
- Inspection standards, quality requirements for encapsulated assemblies

TC36 **Masking Applications**

- Methods and materials used for masking
- Masking for part retention, soldering, conformal coating and ultraviolet (UV) protection

TC37 **Chem Film Touch-up**

- Application of materials to repair metal surface finishes
- Inspection and quality requirements for surface finishes

TC39 **Failure Analysis, Part Rejection Flow**

- Control of assemblies undergoing failure analysis
- Non-standard routes and operation sequences
- Generating Failure Analysis Reports, data acquisition

TC46 **Solder Paste Training, Stencil Applications**

- Methods and handling of solder paste applications
- Safety and quality requirements of solder paste use
- Use and maintenance of stencils to apply solder paste
- Use of surface mount adhesives

TC47 **Wave Solder Operation**

- Operation and maintenance of wave solder machine
- Preparation of circuit boards for wave soldering, quality requirements

TC48 **Assembly Skills and Equipment Operation**

- Operation of assembly tools and equipment for specific product applications
- Specific assembly techniques unique to particular product lines

Rantec Power Systems Inc. Menu Curriculum
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BUSINESS SKILLS

TC03 **Document Control, Accessing Part Data**

- Understanding of and compliance with the "Controlled Print" system
- Procedures for controlling drawings, determining current release status
- Use of Material Management Hewlett Packard (MMHP) computer for accessing drawing and document data
- Application of component and drawing data in daily manufacturing

TC10 **Interpretation of Engineering Documents and Drawings**

- Ability to extract necessary assembly data from engineering drawings
- Ability to apply engineering document data to perform component assembly, inspection and testing

TC16 **Creation of Engineering Documents and Drawings for Release**

- Rantec standards for engineering drawings
- Assembly of document packages, document approval and release protocols

TC24 **Material Review Board (MRB) Authority Training**

- Interpretation and application of requirements for hardware disposition
- Material Review Board functions and decision logic

TC38 **Government and Industry Specifications and Standards**

- Quality and engineering standards that drive internal requirements
- Application of standards and specifications to Rantec design efforts
- Application of standards and specifications to Rantec production organization and operating procedures

TC43 **Project Planning Tools**

- Understanding the elements of project charts, Gantt charts
- Use of project charts to provide program visibility and focus on necessary tasks for team effectiveness
- Use of databases to capture action items and track accomplishment

TC49 **Strategic Planning and Process Evaluation**

- Organizing work flow and resource management
- Understand and apply production and process organizational models
- Monitor processes to measure achievement of production goals

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CONTINUOUS IMPROVEMENT

TC21 **ISO 9001 Requirements***
- Quality System Requirements, specific requirements of ISO 9001
- The Rantec program for complying with each program requirement
- Rantec's transition from certification under the 1994 version of ISO 9001 to certification under the 2000 version

TC25 **Lean Manufacturing**
- The organizational impact of adopting lean manufacturing principles
- Lean manufacturing tools, 5S program, value-stream mapping

TC29 **6 Sigma Quality**
- Key principles enabling Rantec to simplify, eliminate defects and reduce variation in processes
- Process measurement techniques to measure effectiveness

TC40 **ISO 9001 Familiarity***
- Objectives of the Rantec Quality Management System
- The relevance and importance of each occupational category for achievement of quality objectives

TC42 **ISO Auditor Training**
- Performance of ISO internal quality audits
- Organizing, planning, conducting, and follow up of audits
- Auditing as a tool for maintaining a quality program

TC44 **Team Building**
- Characteristics of top-performing teams
- Motivating team members to success, leadership skills
- Conflict resolution, controlling confrontation

*Combined ISO training under TC21 and TC40 will not exceed 8 class/lab hours.

COMPUTER SKILLS

TC41 **Computer Skills, Software Applications**
- Proficiency in Microsoft Office applications
- Integrating applications such as Microsoft Office applications into process planning and control